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EXAMINER

NGUYEN, THU HA T

ART UNIT PAPER NUMBER

2155

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/693,268	BASKEY ET AL.	
	Examiner	Art Unit	
	Thu Ha T. Nguyen	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims **1-43** are presented for examination.

Response to Arguments

2. Applicant's arguments filed on April 22, 2004 with respect to claims 1-43 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-43 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Sahai et al.**, (hereinafter Sahai) U.S. Patent No. **6,594,699**, in view of **Carlson** U.S. Patent No. **6,697,849**.

5. As to claim 1, **Sahai** teaches the invention substantially as claimed, including a method for type of service classification of a communication request for an application executing on a server, the method comprising the steps of:

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receiving the communication request (abstract, figures 2-3, col. 1 lines 60-col. 2 lines 65);

obtaining application level information from the received communication request (abstract, figures 2-3, col. 2 lines 46-col. 3 lines 22);

assigning a type of service classification to the is received communication request based on the obtained application level information (abstract, figure 3, col. 3 lines 5-col. 4 lines 63, col. 6 lines 12-49); and

providing the assigned type of service classification information for the communication request to a process executing on the server for processing communications from the server responsive to the communication request (abstract, figure 3, col. 5 lines 47-col. 6 lines 53). However, **Sahai** does not explicitly teach the step of providing an application plug-in associated with the application in an operating system kernel of the server. **Carlson** teaches the step of providing an application plug-in associated with the application in an operating system kernel of the server (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify **Sahai** in view of **Carlson** to have the process of providing an application plug-in associated with the application in an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

6. As to claim 2, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a TCP/IP protocol communication and wherein the step of obtaining application level information from the received communication request comprises the step of obtaining level 5 or above information from the received communication request (abstract, figures 1-3, col. 5 lines 47-col. 6 lines 11).

7. As to claim 3, **Sahai** teaches the invention substantially as claimed, wherein the step of providing the assigned type of service classification information for the communication request to a process executing on the server comprises the step of providing the assigned type of service classification information for the communication request to a TCP/IP kernel executing on the server (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49). **Sahai** does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized

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that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

8. As to claim 4, **Sahai** teaches the invention substantially as claimed, wherein the step of providing the assigned type of service classification information for the communication request to a TCP/IP kernel further comprises the step of providing a source IP address, a destination IP address and a TCP/IP port number associated with the communication request to the TCP/IP kernel as an associated identification for the assigned type of service and wherein the method further comprises the step performed by the TCP/IP kernel of associating the assigned type of service with a plurality of communications from the server responsive to the received communication request based on the provided source IP address, destination IP address and TCP/IP port number (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49). **Sahai** does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person

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of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

9. As to claim 5, **Sahai** does not explicitly teach the invention as claimed; however, **Carlson** teaches the step of associating the assigned type of service classification with a new thread instance initiated on the server based on the obtained application level information (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32, col. 18, lines 5-col. 19, lines 5, col. 20, lines 42-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the step of associating the assigned type of service classification with a new thread instance initiated on the server based on the obtained application level information because it would have an efficient communications system that provide system independent operating on a server to perform an optimal level of service and quality of service between client and server with different platforms.

10. As to claim 6, **Sahai** does not teach the invention as claimed; however, **Carlson** teaches wherein the step of associating the assigned type of service classification with a new thread instance initiated on the server based on the obtained application level information further comprises the step of associating the assigned type of service classification across a sockets API for associated connections based on the obtained application level information (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10,

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lines 1-32, col. 18, lines 5-col. 19, lines 5, col. 20, lines 42-54). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the same motivation as set forth in claim 5, above.

11. As to claim 7, **Sahai** teaches the invention substantially as claimed, wherein the step of assigning a type of service classification further comprises the step of assigning the type of service classification based on workload management information associated with the server (col. 4 lines 40-43).

12. As to claim 8, **Sahai** does not explicitly teach the invention as claimed; however, **Carlson** teaches the steps of: providing information associated with the received communication to a workload management process executing on the server; and receiving the workload management information from the workload management process (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the workload management process provides workload management and executing on the server because it would have an efficient communications system that based on workload to determine and provide the type of service to client in order to have a better performance and an optimal level of service and quality of service between client and server with different platforms.

13. As to claim 9, **Sahai** teaches the invention substantially as claimed, wherein the assigned type of service classification assigns at least one of a central processing unit (CPU) priority allocation, a memory allocation or an input/output (I/O) bandwidth allocation to the received communication request (col. 3 lines 23-60, col. 4 lines 64-col. 6 lines 49).

14. As to claim 10, **Sahai** teaches the invention substantially as claimed, further comprising the step of including type of service information in communications from the server responsive to the communication request based on the assigned type of service classification, the type of service information being usable by a network communicating the communications from the server (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

15. As to claim 11, **Sahai** teaches the invention substantially as claimed, wherein the type of service information provides a different type of service for network of communications from the server than the assigned type of service classification provides from the server for processing of the communication request (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization; however, **Carlson** teaches the network prioritization of communications from the server (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the network prioritization of communications from the server because it would have the same motivation as set forth in claim 10, supra.

16. As to claim 12, **Sahai** teaches the invention substantially as claimed, wherein the method further comprises the step of providing a separate connection for communications from the server responsive to the communication request to support the different type of service from the server than the assigned type of service classification provides from the server for processing of the communication request (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the network prioritization of communications, **Carlson** teaches the network prioritization of communications (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the network prioritization of communications

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from the server because it would have the same motivation as set forth in claim 10, supra.

17. As to claim 13, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a web-based request and the application is a web application (col. 3 lines 5-col. 6 lines 49).

18. As to claim 14, **Sahai** teaches the invention substantially as claimed, wherein the web-based request is a hypertext transport protocol (HTTP) request and wherein the application level information includes a universal resource locator (URL) of the HTTP request and wherein the assigning step further comprises the step of parsing the URL on the server to make a policy based determination of the type of service classification for the communication request (col. 3 lines 5-col. 6 lines 49).

19. As to claim 15, **Sahai** teaches the invention substantially as claimed, wherein the assigned type of service classification assigns at least one of a central processing unit (CPU) priority allocation, a memory allocation or an input/output (I/O) bandwidth allocation to the received communication request (col. 3 lines 23-60, col. 4 lines 64-col. 6 lines 49).

20. As to claim 16, **Sahai** teaches the invention substantially as claimed, wherein the step of providing the assigned type of service classification information for

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the communication request to a process executing on the server comprises the step of providing the assigned type of service classification information for the communication request to a TCP/IP kernel executing on the server and wherein the method further comprises the step performed by the TCP/IP kernel of associating the assigned type of service with a plurality of communications from the server responsive to the received communication request (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49).

Sahai does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

21. As to claim 17, **Sahai** does not explicitly teach the invention as claimed, further comprising the step of including type of service information in communications from the server responsive to the communication request based on the assigned type of service classification, the type of service information being usable by a network

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communicating the communications (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai** and **Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

22. As to claim 18, **Sahai** teaches the invention substantially as claimed, wherein the application level information includes an identification of a user initiating the communication request at a source device of the communication request (figure 1-3).

23. As to claim 19, **Sahai** teaches the invention substantially as claimed, wherein the application level information is obtained from a cookie contained in the communication request (col. 3 lines 60-col. 6 lines 11).

24. As to claim 20, **Sahai** teaches the invention substantially as claimed, including a system for type of service classification of a communication request for an application executing on a server, the system comprising:

a communication process executing on the server that processes communications between the server and a communication network associated with the communication request based on an associated type of service classification (abstract, figures 1-3, col. 1 lines 60-col. 2 lines 65, col. 5 lines 1-col. 6 lines 49); and

obtains application level information from the received communication request, assigns the type of service classification to the received communication request based on the application level information and provides the assigned type of service classification to the communication process (abstract, figures 2-3, col. 2 lines 46-col. 4 lines 63, col. 6 lines 12-49). However, **Sahai** does not explicitly teach an application plug-in process associated with the application in an operating system kernel of the server. **Carlson** teaches an application plug-in process associated with the application in an operating system kernel of the server (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify **Sahai** in view of **Carlson** to have the process of providing an application plug-in associated with the application in an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

25. As to claim 21, **Sahai** does not explicitly teach the invention as claimed, further comprising a workload management process executing on the server that receives information about the communication request from the application plug-in process and provides information related to server resources for use in allocating server resources to the communication process for use in processing communications between the server and a communication network associated with the communication request based on an associated type of service classification (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify **Sahai** in view of **Carlson** to have the process of providing an application plug-in associated with the application in an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

26. As to claim 22, **Sahai** teaches the invention substantially as claimed, including a system for type of service classification of a communication request for an application executing on a server, the system comprising:

a communication process executing on the server that processes communications from the server responsive to the communication request (abstract, figures 1-3, col. 1 lines 60-col. 2 lines 65, col. 5 lines 1-col. 6 lines 49); and

means for receiving the communication request (abstract, figures 2-3, col. 1 lines 60-col. 2 lines 65);

means for obtaining application level information from the received communication request (abstract, figures 2-3, col. 2 lines 46-col. 3 lines 22);

means for assigning a type of service classification to the received communication request based on the obtained application level information (abstract, figure 3, col. 3 lines 5-col. 4 lines 63, col. 6 lines 12-49); and

means for providing the assigned type of service classification information for the communication request to the communication process (abstract, figure 3, col. 5 lines 47-col. 6 lines 53). However, **Sahai** does not explicitly teach the step of providing an application plug-in associated with the application in an operating system kernel of the server. **Carlson** teaches the step of providing an application plug-in associated with the application in an operating system kernel of the server (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify **Sahai** in view of **Carlson** to have the process of providing an application plug-in associated with the application in an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

27. As to claim 23, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a TCP/IP protocol communication and wherein the means for obtaining application level information from the received communication request comprises means for obtaining level 5 or above information from the received communication request (abstract, figures 1-3, col. 5 lines 47-col. 6 lines 11).

28. As to claim 24, **Sahai** teaches the invention substantially as claimed, wherein the means for providing the assigned type of service classification information for the communication request to the communication process comprises means for providing the assigned type of service classification information for the communication request to a TCP/IP kernel executing on the server (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49). **Sahai** does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

29. As to claim 25, **Sahai** teaches the invention substantially as claimed, wherein the means for assigning a type of service classification further comprises means for assigning the type of service classification based on workload management information associated with the server (col. 4 lines 40-63).

30. As to claim 26, **Sahai** does not explicitly teach the invention as claimed; however, **Carlson** teaches further comprising: means for providing information associated with the received communication to a workload management process executing on the server; and means for receiving the workload management information from the workload management process (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai** and **Carlson** to have the workload management process provides workload management and executing on the server because it would have an efficient communications system that based on workload to determine and provide the type of service to client in order to have a better performance and an optimal level of service and quality of service between client and server with different platforms.

31. As to claim 27, **Sahai** teaches the invention substantially as claimed, further comprising means for including type of service information in communications from the server responsive to the communication request based on the assigned type of

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service classification, the type of service information being usable by a network communicating the communications from the server (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

32. As to claim 28, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a web-based request and the application is a web application (col. 3 lines 5-col. 6 lines 49).

33. As to claim 29, **Sahai** teaches the invention substantially as claimed, wherein the web-based request is a hypertext transport protocol (HTTP) request and wherein the application level information includes a universal resource locator (URL) of the HTTP request and wherein the means for assigning further comprises means for parsing the URL on the server to make a policy based determination of the type of service classification for the communication request (col. 3 lines 5-col. 6 lines 49).

34. As to claim 30, **Sahai** teaches the invention substantially as claimed, wherein the assigned type of service classification assigns at least one of a central processing unit (CPU) priority allocation, a memory allocation or an input/output (I/O) bandwidth allocation to the received communication request (col. 3 lines 23-60, col. 4 lines 64-col. 6 lines 49).

35. As to claim 31, **Sahai** teaches the invention substantially as claimed, wherein the means for providing the assigned type of service classification information for the communication request to the communication process comprises means for providing the assigned type of service classification information for the communication request to a TCP/IP kernel executing on the server and wherein the system further comprises the TCP/IP kernel, wherein the TCP/IP kernel further comprises means for associating the assigned type of service with a plurality of communications from the server responsive to the received communication request (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49). **Sahai** does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application

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interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

36. As to claim 32, **Sahai** teaches the invention substantially as claimed, further comprising means for including type of service information in communications from the server responsive to the communication request based on the assigned type of service classification, the type of service information being usable by a network communicating the communications from the server (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

37. As to claim 33, **Sahai** teaches the invention substantially as claimed, including a computer program product for type of service classification of a

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communication request for an application executing on a server, comprising: a computer-readable storage medium having computer-readable program code embodied in said medium, said computer-readable program code comprising:

computer-readable program code which receives the communication request (abstract, figures 1-3, col. 1 lines 60-col. 2 lines 65, col. 5 lines 1-col. 6 lines 49);

computer-readable program code which obtains application level information from the received communication request (abstract, figures 2-3, col. 2 lines 46-col. 3 lines 22);

computer-readable program code which assigns a type of service classification to the received communication request based on the obtained application level information (abstract, figure 3, col. 3 lines 5-col. 4 lines 63, col. 6 lines 12-49); and

computer-readable program code which provides the assigned type of service classification information for the communication request to a process executing on the server for processing communications from the server responsive to the communication request (abstract, figure 3, col. 5 lines 47-col. 6 lines 53). However, **Sahai** does not explicitly teach the step of providing an application plug-in computer-readable program code associated with the application in an operating system kernel of the server.

Carlson teaches the step of providing an application plug-in associated with the application in an operating system kernel of the server (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). One of ordinary skill in the Data Processing art at the time of the invention would have been motivated to modify **Sahai** in view of **Carlson** to have the process of providing an application plug-in associated with the application in

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an operating system kernel of the server; wherein said application plug-in performs the steps of receiving the request, obtaining the application level information, assigning a type of service and providing the type of service because it would perform and provide a quality and optimal level of services, and perform particular types of operations in order to reduce the latencies between client and server.

38. As to claim 34, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a TCP/IP protocol communication and wherein the computer-readable program code which obtains application level information from the received communication request comprises computer- readable program code which obtains level 5 or above information from the received communication request (abstract, figures 1-3, col. 5 lines 47-col. 6 lines 11).

39. As to claim 35, **Sahai** teaches the invention substantially as claimed, wherein the computer-readable program code which provides the assigned type of service classification information for the communication request to the communication process comprises computer-readable program code which provides the assigned type of service classification information for the communication request to a TCP/IP kernel executing on the server (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49).

Sahai does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10),

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the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

40. As to claim 36, **Sahai** teaches the invention substantially as claimed, wherein the computer-readable program code which assigns a type of service classification further comprises computer-readable program code which assigns the type of service classification based on workload management information associated with the server (col. 4 lines 40-43).

41. As to claim 37, **Sahai** does not explicitly teach the invention as claimed; however, **Carlson** teaches further comprising: computer-readable program code which provides information associated with the received communication to a workload management process executing on the server; and computer-readable program code which receives the workload management information from the workload management process (figures 4-6, col. 7, lines 60-col. 8, lines 7, col. 10, lines 1-32). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the

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invention was made to combine the teachings of **Sahai and Carlson** to have the workload management process provides workload management and executing on the server because it would have an efficient communications system that based on workload to determine and provide the type of service to client in order to have a better performance and an optimal level of service and quality of service between client and server with different platforms.

42. As to claim 38, **Sahai** teaches the invention substantially as claimed, further comprising computer-readable program code which includes type of service information in communications from the server responsive to the communication request based on the assigned type of service classification, the type of service information being usable by a network communicating the communications from the server (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

43. As to claim 39, **Sahai** teaches the invention substantially as claimed, wherein the communication request is a web-based request and the application is a web application (col. 3 lines 5-col. 6 lines 49).

44. As to claim 40, **Sahai** teaches the invention substantially as claimed, wherein the web-based request is a hypertext transport protocol (HTTP) request and wherein the application level information includes a universal resource locator (URL) of the HTTP request and wherein the computer readable program code which assigns further comprises computer-readable program code which parses the URL on the server to make a policy based determination of the type of service classification for the communication request (col. 3 lines 5-col. 6 lines 49).

45. As to claim 41, **Sahai** teaches the invention substantially as claimed, wherein the assigned type of service classification assigns at least one of a central processing unit (CPU) priority allocation, a memory allocation or an input/output (I/O) bandwidth allocation to the received communication request (col. 3 lines 23-60, col. 4 lines 64-col. 6 lines 49).

46. As to claim 42, **Sahai** teaches the invention substantially as claimed, wherein the computer-readable program code which provides the assigned type of service classification information for the communication request to the communication process comprises computer-readable program code which provides the assigned type

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of service classification information for the communication request to a TCP/IP kernel executing on the server and wherein the computer program product further comprises TCP/IP kernel computer-readable program code which associates the assigned type of service with a plurality of communications from the server responsive to the received communication request (col.3 lines 5-col. 4 lines 63, col. 5 lines 1-col. 6 lines 49).

Sahai does not explicitly teach a TCP/IP kernel; however, **Sahai** discloses the request is sent to server (10), the server obtains the request associated with client specifications, capabilities and references. The request is executed in the server (10), the server (10) executes, initiates and provides client information as shown in figure 3, col. 5 lines 1-col. 6 lines 49. It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made that **Sahai** implicitly discloses the server (10) includes an application interface that processes the request and sends the reply to the client equivalent to the TCP/IP kernel as disclosed in the applicant's specification. A person of ordinary skill in the art would have recognized that **Sahai** performs the same function in substantially the same way to reach substantially the same result.

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47. As to claim 43, **Sahai** teaches the invention substantially as claimed, further comprising computer-readable program code which includes type of service information in communications from the server responsive to the communication request based on the assigned type of service classification, the type of service information being usable by a network communicating the communications from the

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server (col. 4 lines 40-63). However, **Sahai** does not explicitly teach the prioritization of traffic flows, **Carlson** teaches in order to avoid unnecessary network traffic, the web server includes a load balancing and queue manager to include the feature of prioritization of traffic flow (figures 4-6, col. 10, lines 41-col. 13, lines 3). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention was made to combine the teachings of **Sahai and Carlson** to have the prioritization of traffic flows because it would have an efficient communications system that based on traffic load to determine and provide the type of service to client in order to have a better performance and reduce network traffic between client and server.

Conclusion

48. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

49. Joseph (USPN 6,038,603), Knight et al. (USPN 5,787,019) are recited for disclosing various information related to the claimed invention. Applicants are requested to consider these prior art references when responding to this office action.

50. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Ha Nguyen, whose telephone number is (703) 305-7447. The examiner can normally be reached Monday through Friday from 8:00 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam, can be reached at (703) 308-6662.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications.

Thu Ha Nguyen

September 10, 2004


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER